DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT CORPS OF ENGINEERS
CESAS-EN-H P.O. BOX 889
SAVANNAH, GEORGIA 31402-0889

DISTRICT REGULATION NO. 1 August 1997

Project Operation
WATER CONTROL MANAGEMENT

1. Purpose. This regulation describes water control management policies and procedures to be followed in the Savannah District.

2. Applicability. This regulation applies to the Engineering and Operations Divisions.

3. References.

a. Savannah River Basin Water Control Manual

b. DP 1130-2-16

c. DR 10-1-1

d. EM 1110-2-3600

e. EM 1110-2-4000

f. ER 1110-2-240

g. ER 1110-2-241

h. ER 1110-2-248

i. ER 110-2-1400

j. ER 1110-2-1941

k. ER 1110-2-4001

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This DR supersedes DR 1130-1-3, 14 Sep 92

l. ER 1110-2-4401

m. ER 1130-2-324

n. ER 1130-2-417

o. ER 1130-2-419

p. ER 1140-2-1

q. ER 1110-2-8154

r. ETL 1110-2-231

s. ETL 1110-2-251

t. SADvR 1130-2-3

u. SADvR 1130-2-4

v. SADvR 1130-2-16

4. General Policies and Objectives.

a. The Savannah District is responsible for insuring the maximum public benefits from its water resources projects consistent with the purpose for which they were authorized and developed. A water control management plan has been developed for each reservoir project to conform with the objectives and specific provisions of its authorizing legislation and applicable Corps of Engineers directives. These water control management plans are documented in reference 3.a.

b. In the execution of the water control plans, appropriate attention will be given to project safety to insure that the projects are operated for the safety of users and the general public. Care is to be exercised in the scheduling of reservoir releases to assure that controlled releases minimize project impacts and do not jeopardize the safety of persons engage in activities downstream of the facilities. Provisions are to be made for issuing adequate warnings or otherwise alerting all affected interests to possible hazards from project activities.

c. Water control management decisions are made considering hydrologic and climatologic factors, conditions at upstream reservoirs,

potential flood threats present and projected lake levels, and the overall management of project purposes (flood control, hydropower, recreation, navigation, water supply, water quality, and fish and wildlife). Evaluation of these factors requires well-qualified, technically-trained personnel with special experience in the field of modern hydrology, hydraulic engineering, and water control management.

d. Transmission of instructions from the water control management unit through several individuals or other organizational units can be a source of delay and misunderstandings. Therefore, clear lines of communication and authority must be maintained. Occasionally it will be necessary fir those in Engineering Division making water control management decisions to contact the Power Project Manager directly in order that satisfactory instructions can be given or hydrologic data can be obtained. Particularly during time of emergencies, there must be no delay in transmission of instructions or hydrologic data between operations personnel at the projects and the water control management unit. In these instances, the Power Project Manager will act on instructions received directly from the water control management unit on all matters regarding the regulation of water. Advisory notification will be furnished to Operations Division as soon as possible.

5. Responsibilities. The Hydraulics Section, Hydrology and Hydraulics Branch, Engineering Division, is responsible for water control management in the Savannah District. This includes the regulation of the Hartwell, Richard B. Russell, J. Strom Thurmond, and New Savannah Bluff projects to achieve project purposes of flood control, navigation, recreation, water supply, fish and wildlife enhancement, and water quality. Operations Division is responsible for the operation and maintenance if these projects. Assigning responsibility for water control management to the Hydraulics Section does not diminish the need for, or the desirability of, appropriate and adequate interstaff coordination. Hydraulics Section will be responsible for insuring that such coordination has been effected and subsequent actions are take. Appendix A enumerates the specific responsibilities of Engineering and Operations Divisions related to water control management.

6. Operations.

a. Normal Conditions. Normal conditions exist when there is no flood or other emergency and none is anticipated. During these periods, water control management will be in accordance with the approval water control manuals, instructions, and operating criteria for all project functions. Project data is based on Central Standard Time and should be transmitted to the Hydraulics Section by 0830 hours Central Standard Time each weekday morning. The Hydraulics Section will be furnished daily records precipitation, river stages, pool elevations, project inflows, outflows, generation and general streamflow conditions. The Hydraulics Section will prepare forecasts of reservoir inflow and river stages at key stations for District use only. By noon each Wednesday, the Hydraulics Section will prepare a detailed water forecast along with a recommended schedule of power generation for the next week using pool elevation rule curves, power contract commitments, antecedent and expected rainfall, and the rainfall-runoff relationships in accordance with the Savannah River Basin Water Control Manual. To insure that all pertinent information is considered, such as any powerplant maintenance activity, proposed operational changes affecting generation of power, or water level management for fish spawning or other recreational purposes, input is submitted each Wednesday by representatives of Planning Division and the Technical Support Branch of Operations Division to prepare the recommended schedule of power generation. After review and appropriate revisions, the recommended scheduled will be transmitted to the Water Control Management Support Team, SAD, by Wednesday afternoon. Any changes to the schedule made between SAD and Southeastern Power Administration (SEPA) based on compromises between power sold, essential elevations, and other functions will be coordinated directly with the Hydraulics Section, Savannah District. The Hydraulics Section will be advised by Friday on the amount of energy to be taken from each project as soon as confirmed by SEPA. Hourly schedules will be furnished by SEPA directly to the Powerplant Operator. Hourly schedules are also available over the Internet for the current power week. Copies of these schedules are mailed to the Hydraulics Section, Savannah District.

b. Flood Operations.

(1) When flood operations are occurring or anticipated to occur, water releases from the projects will be determined by the Hydraulics Section in strict accordance with the latest approved water control manual. In the event that spillway releases which result in a total project discharge greater than the normal maximum hydropower discharge are required, the District Engineer or his designated alternate will be notified and will approve or disapprove the release. Once the gates have been opened, the District Engineer will be kept apprised of any significant increase in discharge that is required. If downstream flooding is anticipated personnel from Operation Division's Readiness Branch will be contacted. The Hydraulics Section will furnish by telephone to the SAD Water Control Management Support Team, as necessary, a forecast of pool stages and releases to be meet downstream flood control requirements. At least one of the following SAD personnel shall be contacted at any time during a flood emergency:

| Name | Office Phone | Home Phone |
|---|---|---|
| Robert Watson | 404-331-6705 | 770-474-0810 |
| Roberto Del Valle | 404-331-5263 | 770-921-7609 |
| Kaiser Edmond | 404-331-6734 | 770-994-7738 |

(2) After reviewing these directives, the Hydraulics Section will advise SEPA of turbine releases to be made, and then advise the Water Control Management Support Team, SAD, of arrangements made with SEPA. The Hydraulics Section will advise the Power Project Manager of the releases required by spillage and the tolerance which may be permitted. An advisory notification will then be sent to Operations Division. The Hydraulics Section will notify Operations Division and SAD of the arrangements made at the first opportunity during normal work hours.

c. Special Operations. Occasionally, a need may arise to temporarily modify the water releases from a project. Examples of these needs are for search and rescue operations, to provide a specified downstream flow for a particular event, or to control a downstream pollutant.

In these instances, Operations Division and Hydraulics Section personnel will be notified in accordance with procedures described in appendix B. When modified releases are recommended, one of the SAD personnel listed in paragraph 6b(1) will be notified. After initial notification, the District Hydraulics Section will advise SEPA of the releases to be made and advise the Water Control Management Support Team, SAD, of arrangements made with SEPA. If, in the judgment of the Hydraulics Section, project releases should be discontinued immediately, the Power Project Manager or his designated representative will be directly contacted. The Hydraulics Section will notify Operations Division, SAD and SEPA as soon as possible. If the modified releases will affect any municipal or industrial water users, the Hydraulics Section will be responsible for coordinating the modified release schedule with them.

A. Water Control Management for Fish Management Purposes.

(1) Fish Spawning. Water control management for dish management purposes will be conducted in accordance with SADvR 1130-2-16. At the earliest possible date, the Operations Division Fisheries Biologist will notify the Hydraulics Section of the beginning and ending of the largemouth bass spawning period. During that period, Hydraulics Section will schedule releases, without jeopardizing other project purposes, so that the downward fluctuation or lowering of the lake level will not exceed 6 inches from the maximum elevation reached during the spawning period. The SAD Water Control Management Support Team and the District Natural Resources and Environmental Compliance Section will be notified as far in advance as possible whenever it appears that it will not be possible to maintain the lake water level fluctuations within the limits for the period described.

(2) Fish Entrainment. It is our policy not to generate when there is a threat of killing significant numbers of fish (as determined by the Corp's District Operations Division Fisheries Biologist at the project) unless a system power emergency exists that threatens interruption of power and/or brownouts. A seasonal monitoring program is conducted to detect a potential fishkill.

Should a fishkill occur, notification of personnel will follow the current Plan of Action to Prevent or Minimize Blueback Herring Entrainment.

e. Emergency Operations. Should a person fail into tailrace or intake section of a project or come into contact with an energized conductor within or feeling from the project, the powerplant operator or nearest responsible employee will take emergency actions in accordance with established procedures. After the affected utilities are notified, the Hydraulics Section will be notified if the emergency actions result in a change to the water release schedule.

f. Dam Safety Related Operations. In the event that critical conditions develop which may lead to failure of the dam or large uncontrolled release of water, water control management will be in accordance with DP 1130-2-16, Savannah River Emergency Action Plan.

7. Personnel.

a. The following personnel of the Hydraulics Section are assigned to water control management and may be contacted at any time:

| Name | Office Phone | Home Phone |
|---|---|---|
| Annette Parker | (912) 652-5518 | (912) 898-0655 |
| Stan Simpson | (912) 652-5501 | (912) 598-8847 |
| Joe Hoke | (912) 652-5516 | (912) 756-4050 |
| Joel James | (912) 652-5513 | (912) 925-8102 |
| Randall Miller | (912) 652-5456 | (912) 356-1213 |

b. The following personnel in Operations Division are responsible for the operation of the Powerplants and may be contacted at any time:

| Name | Office Phone | Home Phone |
|---|---|---|
| Phil Parsley | (912) 652-5997 | (912) 897-7646 |
| R.C. Downing | (912) 652-5341 | (912) 897-3567 |

2 Appendixes
Appendix A Responsibilities
Appendix b Notification Plan

GRANT M. SMITH
COL, EN
Commanding

DISTRIBUTION D
Plus CESAS-IM-PR (5)
CESAS-IM-PL (1)
CESAS-EN (1)
CESAS-EN-H (1)
CESAS-EN-SF (1)
CESAS-OP (1)
CESAS-OP-S (1)

# APPENDIX A

## Responsibilities

1. The responsibilities of the Hydraulics Section, Hydrology and Hydraulics Branch, Engineering Division, pertinent to water control management include but are not limited to, the following:

a. Budgets for water control management activities through the O&M general budgeting process.

b. Prepares and coordinates water control manuals which prescribe and document the regulation of each reservoir for its designed purposes including: flood control; hydropower production; water supply; navigation; fish and wildlife management; recreation; and water quality.

c. Compiles the necessary basic data on precipitation, river stages, reservoir elevations, and general streamflow conditions.

d. Prepares storage and pool elevation projections each Wednesday for the following week and makes water generation availability analyses and forecasts.

e. Conducts a meeting each Thursday morning with Operations and Planning Division personnel to review storage and pool elevation projections and power generation availability analyses.

f. Performs flood routings and makes lake elevation and river stage forecasts, and coordinates and schedules lake releases during flood periods.

g. Submits to SAD water control management data consisting of pool elevations, inflows, outflows, depth of precipitation, hydrographs at downstream control points, and other hydrologic data.

h. Forwards periodic reports to SAD during droughts showing projected reservoir stages including a "worst case" hydrologic condition.

i. Informs responsible District personnel on critical weather and streamflow conditions affecting the public and District activities,

issues specified flood reports on flood emergencies,and dispatches flood survey teams to affected areas for the purpose of determining flood damages and to notify local officials that District facilities and personnel are available upon request to assist in emergency conditions.

j. Notifies water users of any impending interruption in their water supplies due to modified project releases.

k. Develops District's Dam Operation Management Policy and assists developing plans of evacuation.

l. During floods, forwards reports as necessary to SAD containing data on predicted peak stages and percentage of flood control storage utilized.

m. Prepares the pertinent sections of all District reports dealing with water control management and assists in the planning of new projects to insure that use is made of experience gained from water control management of existing control works.

n. Prepares interim regulation plans for projects under construction for the control of water releases and pool elevations as they affect construction activities and other reservoirs in the system.

o. Conducts hydrologic investigations in support of water control management such as the determination of water travel times and channel capacities, the evaluation of valley storage effects under a wide variety of conditions, the study of runoff characteristics and the evaluation of unit hydrographs.

p. Plans and supervises the operation of rainfall and river stage reporting works in conjunction with the operation of reservoir projects.

q. Operates sedimentation and water quality sampling and analysis equipment and performs sediment and pollution survey sampling.

r. Conducts a continuing program of thoroughly investigating the hydrologic relationships of each flood as quickly as the data becomes available.

s. Prepares annual report to OCE as well as other required reports on water control management activities.

t. Periodically reviews power operating rule curves for the reservoir projects with power.

u. Maintains liaison with private power companies and Federal and state agencies for the purpose of coordinating water control management responsibilities.

v. Attends periodic meetings on water control management sponsored by OCE and SAD.

2. The responsibilities of the Technical Support Branch, Operations Division, pertinent to water control management include but are not limited to, the following:

a. Provides technical advice and assistance to the Power Project Manager on matters pertaining to power generation, maintenance, and operation.

b. Assists in studies pertaining to power generation and coordinates engineering studies for the modification and improvement of plant design.

c. Responsible for radio communications in the Savannah District.

d. Responsible for safe operating procedures for all completed dams in the Savannah District. Prepares the District Dam Safety Plan.

e. Notifies the Hydraulics Section of any scheduled or unscheduled maintenance at the projects which will remove any power unit or transformer bank from service.

f. Provides coordination for all lake activities.

g. Notifies Hydraulics Section of the beginning and end of the largemouth bass spawning season.

3. The responsibilities of the J. Strom Thurmond Powerplant, Operations Division, include but are not limited to, the following:

a. Supervises the operation and maintenance of the J. Strom Thurmond powerplant and New Savannah Bluff Lock and Dam.

b. Generates electricity, controls lake elevations, and ascertains that proper streamflow is maintained below the dam.

c. Coordinates all dam safety operations at Thurmond as specified in the District Dam Safety Plan.

d. Notifies the Hydraulics Section whenever 1.0 inch or more of rainfall is measured during a 24-hour period of any weekend or holiday at Thurmond.

e. Notifies the Hydraulics Section in accordance with appendix B of any request by any individual, any law enforcement agency, any local, State, or Federal agency, or any city or municipality to modify project operation schedules.

f. Updates computerized log data hourly, so that data is available for retrieval by the Hydraulics Section.

g. Notifies the Hydraulics Section in accordance with Appendix B of any change in generation schedule which will result in a daily average outflow of less than 4,500 cfs on days other than Saturday or Sunday.

h. Operates and maintains the spillway gates of the New Savannah Bluff Lock and Dam.

i. Notifies Hydraulics Section when water levels in the lock and dam pool or below the dam are insufficient for municipal and industrial water supplies.

5. The responsibilities of the Hartwell Powerplant, Operations Division, pertinent to water control management include but are not limited to, the following:

a. Supervises the operation and maintenance of the Hartwell powerplant.

b. Generates electricity, controls lake elevations, and ascertains that proper streamflow is maintained below the dam.

c. Coordinates all dam safety operations at Hartwell as specified in the District Dam Safety Plan.

d. Notifies the Hydraulics Section whenever 1.0 inch or more of rainfall is measured during a 24-hour period of any weekend or holiday at Hartwell.

e. Notifies the Hydraulics Section in accordance with appendix B of any requests by any individual, law enforcement agency, any local, State, or Federal agency, or any city or municipality to modify project operation schedules.

f. Updates computerized log data hourly, so that data is available for retrieval by the Hydraulics Section.

6. The responsibilities of the Richard B. Russell Powerplant, Operations Division, pertinent to water control management include but are not limited to, the following:

a. Supervises the operation and maintenance of the Richard B. Russell powerplant.

b. Generates electricity, controls lake elevations, and ascertains that proper streamflow is maintained below the dam.

c. Coordinates all dam safety operations at Russell as specified in the District Dam Safety Plan.

d. Notifies the Hydraulics Section whenever 1.0 inch or more of rainfall is measured during a 24-hour period of any weekend or holiday at Russell.

e. Notifies the Hydraulics Section in accordance with Appendix B of any requests by any individual, any law enforcement agency, any local, State, or Federal agency, or any city or municipality to modify project operation schedules.

f. Updates computerized log data hourly, so that data is available for retrieval by the Hydraulics Section.

# APPENDIX B

## NOTIFICATION PLAN

During emergency flood conditions, direct contact will be made between the Projects and the Hydraulics section. In the event that critical conditions develop which may lead to failure of the dam or a large uncontrolled release of water, notification will be in accordance with DP 1130-2-16, Dam Safety Plan. The following individuals should be contacted directly for any nonemergency condition:

a. Operations Project Manager at the affected project:

(1) Mr. Ken Dial, Thurmond Project
Office: (864) 333-1101
Home: (706) 868-8835

(2) Mr. Bob Bain, Russell Project
Office: (706) 213-3401
Home: (706) 285-2407

(3) Mr. Dick Austin, Hartwell Project
Office: (706) 856-0301
Home: (706) 283-3106

b. Power Project Manager at the affected project:

(1) Mr. Phinizy Davis, Thurmond Powerhouse
Office: (864) 333-1162
Home: (706) 860-3082

(2) Mr. Floyd King, Richard B. Russell Powerhouse
Office: (706) 856-0363
Home: (864) 226-6527

c. Operations Division at the District Office:

(1) Mr. Phil Parsley, Chief Technical Support Branch
Office: (912) 652-5997
Home: (912) 897-7646

(2) Mr. Richard C. Downing, Chief Operations Division

Office: (912) 652-5341
Home: (912) 897-3567

d. Hydrology and Hydraulics Branch at the District Office:

(1) Ms Annette Parker, Hydraulics Section

Office: (912) 652-5518
Home: (912) 898-0655

(2) Mr. Stan Simpson, Hydraulics Section
Office: (912)652-5501
Home: (912) 598-8847

(3) Mr. Joe Hoke, Hydraulics Section
Office: (912) 652-5516
Home: (912) 756-4050

(4) Ms. Joel James, Chief, Hydraulics Section
Office: (912) 652-5513
Home: (912) 925-8102

(5) Mr. Randall Miller, Chief, Hydrology & Hydraulics
Office: (912) 652-5456
Home: (912) 356-1213